

## **Appendix G**

**Key Issues for Input on Wisconsin's SWAP for discussion at  
October 8, 1998 SDWA Ad Hoc Advisory Council Meeting**

## **Key Issues for Input on Wisconsin's Source Water Assessment Program for discussion at October 8, 1998 SDWA Ad Hoc Advisory Council Meeting**

The following questions are the third in a series of key issues that have been presented to the SDWA Ad Hoc Advisory Council and other interested stakeholders for their input. We expect that, upon receiving input on these issues, we will be able to draft a Source Water Assessment Program (SWAP) plan that will be acceptable to the Council and other public water system stakeholders. We suggest that you review the Response to Comments on Wisconsin's Source Water Assessment Program document under this cover before you read this document. The responses to the comments received at the June 9<sup>th</sup> 1998 meeting give background essential to understanding all of the questions raised in this document. The following are issues and questions that we would like your input on at the October 8<sup>th</sup>, 1998 meeting.

### **Contaminant Inventory**

The state has targeted the SWAP at contaminants which are regulated under the Safe Drinking Water Act. Potential sources of these contaminants were identified when the Vulnerability Assessment program was developed. These potential sources were expanded to include sources included in the EPA's SWAP Guidance (Appendix E). In the contaminant inventory strategy discussed at the June 9<sup>th</sup> meeting we listed potential contaminant sources to be identified for groundwater system assessments. There was support for use of the Public Water Supply Contaminant Use Inventory (Form 3300-215 previously distributed) for groundwater system contaminant inventories but some questions as to how it will be used. Since then we have prepared an explanation sheet describing these potential sources, listing specific contaminants likely to be present, and describing how the potential sources will be located on a map (Attachment A). We have since initiated vulnerability assessments for municipal systems using Form 3300-215 for contaminant inventories. Potential contaminant sources have been identified on maps of delineated source water areas and will be digitized into a Geographic Information System (GIS). Based on results of these vulnerability assessments we will continue these assessments. However there is still opportunity to revise the assessment process for source water assessments to be carried out in 1999-2002.

**Question 1: Are there contaminants that are not currently regulated by EPA that should be part of the state's SWAP program?**

**Question 2: Are there potential sources of contaminants not listed in the Public Water Supply Contaminant Use Inventory Form 3300-215 that should be included in the SWAP?**

For surface water systems we were advised by the SDWA Ad Hoc Advisory Council to scale back our plan to do incremental potential contaminant inventories of watershed segments. In response to this advice we have eliminated the segmentation strategy and limited our proposed contaminant inventories to identifying land uses which are currently available in GIS layers and locating a few key potential contaminant sources which are also targeted for contaminant source inventories for groundwater systems. Although this involves assisting in data collection for areas currently not in delineated source water protection areas, there are several good reasons to collect data on a statewide basis for both surface water and groundwater public water system protection. These reasons include:

- Non state-wide data layers are unlikely to get support from other programs and be completed cost-efficiently with other programs. Other programs are generally interested in state-wide data sets. Communications with other programs that have data sets of major potential contaminant sources

indicates that these programs are not interested in cooperating with data gathering/updating initiatives that will cover only source water protection areas..

- Wisconsin's Groundwater Law protects all groundwater equally. This was done because Wisconsin has no aquifers that can be "written off" or discounted for future water supply use. The widespread growth of communities shows that it makes sense to be prepared to assess and protect future public water systems.
- Predicting groundwater system source water areas is difficult and technology improvements will enable us to improve our delineations. For example, recent regional modeling of the confined system in the Lower Fox River Valley has shown that recharge areas are typically miles away from groundwater systems and that travel times from the water table surface to the well are on the order of several thousands of years. These delineations are a substantial improvement over simpler delineations such as calculated fixed radius or fixed radius delineations which are now proposed for most groundwater systems in the state. Improved delineations will likely include new areas not inventoried in our initial source water assessments. Having statewide data layers would simplify the reassessment process by providing easy access to key potential contaminant sources.
- Groundwater and surface waters are connected. Although it is quite difficult to determine these connections, it is likely that there are groundwater systems that are receiving recharge from surface water. Groundwater systems affected by surface water may be vulnerable to contaminants in nearby or distant watersheds that would not show up in the potential contaminant source inventory completed for the system. This risk justifies using a holistic statewide approach to identifying potential contaminant sources when feasible.
- About 1/3 of the state is included in surface water source water areas. This portion of the state is also the most populated and contains a large portion of the potential contaminant sources in the state. Sharing costs on statewide data layers is a cost-effective way of covering this area in a way that meets federal Source Water Assessment Program expectations.

To identify key potential contaminant sources for statewide data integration, we have met with representatives from the Watershed Management, Waste Management, and Remediation and Redevelopment programs and have discussed cooperatively building data layers that will be useful to the SWAP as well as to manage the environment in an integrated and comprehensive fashion. A preliminary list of potential contaminant source layers to be cooperatively collected includes: large animal feedlots, landfills, hazardous waste generators, Superfund sites, emergency response and repair sites and mines. Efforts needed to complete these layers generally consist of preliminary data review and accurate site location using Global Positioning Systems technology. These layers are chosen because of their potential to threaten public water supplies and the potential for cooperation with other programs to complete the work. To maximize benefits from the SWAP funds we will continue to seek opportunities to work cooperatively with other programs to gather information useful for surface water and groundwater system assessments.

**Question 3: Do you agree with the State's revised approach to doing contaminant inventories for surface water systems. this approach? If not what are your suggestions?**

### **Resource Characterization - Groundwater Systems**

Input received at the June 9<sup>th</sup> Ad Hoc Advisory Council meeting directed us to re-look at doing more advanced delineations for groundwater systems in karst and confined aquifer settings. There was also some concern that calculated fixed radius delineations are not adequate to protect municipal systems (see comments and responses #8 and #12 in "Response to Comments on Wisconsin's Source Water

Assessment Program”). In order to assess the effectiveness of more advanced delineations and to complete these delineations where appropriate, hydrogeologic and well construction data must be gathered and hydrogeologic investigations will need to be completed. We propose that resource characterizations be conducted in four ways: 1) gather well construction reports for all public water supply wells (Well construction reports give geologic, and well construction information needed to evaluate the susceptibility of the well and other wells in the area. Despite the importance of these reports they are commonly not on file, particularly for noncommunity wells. The DNR proposes to locate well construction reports for as many public wells as feasible in a two-year time period.); 2) support the collection of regional geologic data needed to understand groundwater flow in these settings (See list of additional factors being considered for susceptibility determinations on p.5) 3) support regional groundwater modeling studies in regions where high concentrations of municipal water systems are located; and 4) support funding and/or assist conducting advance delineations for municipal systems. The purpose for conducting resource characterization is to obtain an understanding of the aquifer and the well’s general physical characteristics. The results of the resource characterization analysis will be used to evaluate the sensitivity of the source water to the contaminants and the vulnerability of the well to contamination .

**Question 4: Do you agree with the resource characterization strategy proposed for groundwater systems? If not what suggestions do you have?**

### **Resource Characterization - Surface Water Systems**

Resource characterization will be conducted on the delineated source water protection areas. The purpose for conducting a resource characterization is to obtain a generalized understanding of the watershed’s general physical characteristics. The results of the resource characterization analysis will be used to evaluate the relative sensitivity of the source water to contamination. In order to characterize the condition of the water resources within a source water area a variety of resource characteristics will be evaluated.

### **Lake Winnebago**

The Lake Winnebago watershed is an inland waterway which has been subject to extensive water quality testing, modeling, evaluation and management strategies. There have been extensive efforts and resources devoted to improving water quality in Lake Winnebago. Public participation in water resource management decisions in the Fox-Wolf basin has been high. The DNR will conduct a literature review to obtain the most current information on the resource. Approved DNR water basin water quality management plans will be reviewed. Technical reports published by Northeast Wisconsin Waters for Tomorrow, Fox-Wolf Basin 2000 and other groups will be reviewed. The Lake Winnebago Comprehensive Management Plan will be reviewed. The Lower Green Bay Remedial Action plan will be reviewed.

There has been extensive monitoring of the resource to support the above mentioned management plans. In addition there has been monitoring of the resource collected as part of Wisconsin DNR’s implementation of the Safe Drinking Water Act and Clean Water Act. Chemical, physical and biological measures obtained will be used to characterize the delineated SWAP area. Data is available in a variety of formats, electronic and paper files. The available data which will be reviewed includes, but is not limited to:

- Test results from treated drinking water and untreated source water conducted by the system owner or other agencies or investigators. Inorganic, organic, synthetic organic, radionuclide, bacteria, virus, parasite, algae, microtoxin and other test results are available.
- Ambient Water Chemistry
- Sediment Chemistry
- Habitat Evaluations
- Use Attainment Assessments

Other information used to characterize the Lake Winnebago resource may include:

- Hydraulics and transport characteristics
- Proximity and of stream discharges to intakes
- Magnitude of stream discharges
- Proximity of intakes to wastewater treatment plant and industrial wastewater discharge points
- Potential for surface runoff as indicated by soil characteristics, watershed size and shape, topography, slope and other factors
- Stream length, stream gradient, rainfall, runoff and seasonal variations in time of travel to characterize movement of water through the watershed.

The purpose of the resource characterization will be to assess the susceptibility of public water systems located on Lake Winnebago to contaminants of concern.

### **Lake Michigan and Lake Superior**

Resource characterization for public water systems drawing from Lake Michigan and Lake Superior will be conducted differently. Intakes will be evaluated for shoreline impacts by examining raw water quality parameters such as turbidity and coliform for peaks. If found not to be impacted, available data on Lake Michigan or Lake Superior as a whole will be used. Proximity of intakes to stream discharges will be evaluated. The magnitude of stream discharges in the delineated SWAP areas will be assessed and the closest locally discharging watersheds to the intake/intake cluster will be characterized. Applicable DNR approved basin plans and remedial action plans will be reviewed. Results from untreated source water quality analyses and historical ambient water chemistry data will be reviewed. The purpose of the resource characterization will be to assess the relative sensitivity of the Lake Michigan/Lake Superior intakes to the transport of contaminants of concern. An emphasis will be placed on determining the relative vulnerability of each intake/intake cluster to pathogenic microorganisms.

**Question 5: Do you agree with the resource characterization strategy proposed for surface water systems? If not what suggestions do you have?**

### **Susceptibility Analysis**

#### **Definitions**

**Susceptibility:** the likelihood that a contaminant or contaminants will enter a public water supply at a level which may result in an adverse human health impact. Contaminants of concern are those which are regulated under the Safe Drinking Water Act.

**Sensitivity:** the likelihood that an aquifer or surface water will be impacted by contaminants due to the intrinsic physical attributes of the geologic setting or geomorphology.

Well vulnerability: an assessment of the likelihood of contamination entering a public water supply well that is based on 1) the construction of the well, 2) the geologic sensitivity of the area around the well site, and 3) the results of water quality monitoring.

### **Groundwater System Susceptibility Analysis**

Wisconsin's existing Vulnerability Assessment program will be the basis of this component of the SWAP. The Vulnerability Assessment program was developed in 1992 to eliminate unnecessary costly monitoring and is performed for all community and nontransient noncommunity public water systems every three years. The assessment consists of an inventory of potential sources of contamination within a delineated area and an evaluation of well construction, pesticide susceptibility, industrial chemical use, and vulnerability to volatile organic compounds, ethylene dibromide, asbestos and coal tar (See Attachment B - Form 3300-213). As discussed in the Contaminant Inventory Section of this plan on page 5, the inventory list of potential sources of contamination was updated for the SWAP. Vulnerability assessments are being conducted on the following schedule: 1998 - municipal systems; 1999 - other than municipal systems; 2000 - nontransient noncommunity systems. Vulnerability assessments are not currently required for transient noncommunity systems but will be completed for them during the 1998-2000 time period. The State is considering expanding the range of factors considered in the vulnerability assessment process for the susceptibility analysis. The following are additional factors being considered for susceptibility determinations and subsequent vulnerability assessments.

#### Physical, Biological, Chemical, Hydrologic And Hydrogeologic Characteristics

1. thickness and continuity of confining unit
2. depth to bedrock\* (in existing VA as < 60 ft of overburden = vulnerable to pesticides and ind. chem.)
3. type of bedrock\* (not for wells screened in unconsolidated formations)
4. depth to water table\*
5. permeability of soil/surficial deposits\*
6. presence of naturally occurring inorganics or radionuclides in geologic units

*\* Used as part of the Groundwater Contamination Susceptibility Map and Evaluation (DNR, October 1987)*

#### Significant Potential Sources of Contamination

1. Number of significant potential sources of contamination of all types within SWPA
2. Number of microbial contaminant sources within 200 feet of well
3. Proximity of well to surface water
  - If a system is determined to be under the direct influence of surface water then a surface water susceptibility analysis (see below) will be completed for the watershed upstream of the point of groundwater/surface water connection in addition to the groundwater susceptibility analysis.
  - nature of the GW/SW interaction of the setting. If the static water level in the well is below the water level in a stream within 1200 feet then the system is more vulnerable.

#### Well integrity

1. Compliance with NR 811/812 construction requirements
2. Age of well (i.e. condition of casing)

#### Monitoring results

1. Raw Water Quality Monitoring Data

2. Tritium, oxygen isotope, chlorofluorocarbon or other age dating analyses

The susceptibility analysis will be reported to the owner/operator of each system in a narrative format covering the following topics:

1. Description of the hydrogeologic setting
2. Description of the system integrity
3. Summary of the significant potential sources of contamination
4. Review of water quality data
5. Suggestions for management activities

A more limited approach will be used for determining transient noncommunity wells' susceptibility. For these systems, pathogens and nitrate will be the focus of the susceptibility analysis. We are currently working with the state of Minnesota to develop a strategy to make this determination. The strategy will be based on the premise that one or more of the following conditions must be present for a system not to be susceptible.

- Geological barriers
  - Hydraulic conditions related to pumping, well construction, and aquifer composition
  - Absence of potential sources of pathogens and nitrate in the recharge area
- Where well construction reports are not available a well must not have any potential sources of pathogen or nitrate in the recharge area to be described as "not susceptible". Area-wide assessments may be done for wells where insufficient information exists to make the above determination. Area-wide assessments will rely on resource evaluation by non-well-specific data e.g. several well construction reports for nearby wells indicating a shallow, continuous confining layer.

**Question 6: Do you agree with the susceptibility analysis strategy proposed for groundwater systems? If not what suggestions do you have?**

#### **Surface Water System Susceptibility Analysis**

Due to the small number of surface water systems each intake/intake cluster will be evaluated for susceptibility on a case-by-case basis. Factors to be considered during the susceptibility evaluation process include:

- Resource characterization
- Contaminant source inventory results
- Proximity of stream discharges to intakes
- Magnitude of stream discharges
- Water quality monitoring data
- Input from water supply and watershed professionals

The susceptibility analysis will be reported to the owner/operator of each system in a narrative format covering the above topics. No ranking or rating will be done. No detailed risk assessment will be done.

**Question 7: Do you agree with the susceptibility analysis strategy proposed for surface water systems? If not what suggestions do you have?**

**Question 8: Has the State done an initial review of all data sources available and determined the scope of the need for additional information?**

## **Boundary Water, Multi-State Rivers, and the Great Lakes**

Marinette and Superior are the only public water supply systems in Wisconsin that will have source water protection areas outside of the State (in Michigan and Minnesota respectively). The DNR will work with agencies within those two states to obtain assessment information on those areas. Preliminary contacts with these agencies indicate a willingness to exchange information to assure satisfactory assessments for these two systems. Wisconsin will share relevant information with states (e.g. Illinois, Minnesota, and Michigan) that request assessment information on areas that contribute water to out-of-state public water systems.

Federal facilities and tribal lands are outside of the State's jurisdiction. Therefore the State will not apply its SWAP to those lands. However, the state will share any information that may be relevant to source water assessments being conducted on Federal or Tribal land to entities that request it. The State, in turn will request that Federal and Tribal authorities share available assessment information on lands contributing water to public waters systems in the State.

The State proposes that it share any information relevant to source water assessments with other states, federal facilities, and tribes that request it for the purpose of doing assessments. In turn, we will ask that other states, federal facilities and tribes provide us with available information that is relevant to source water assessments for systems in Wisconsin.

### **Question 9: Is this an acceptable approach to gaining information for more complete and consistent source water assessments?**

In the event of a public water supply becoming contaminated contingency plans are relied on to provide safe drinking water. A contingency plan is defined as the development and implementation of both long- and short-term drinking water supply replacement strategies for supplying safe drinking water to the consumer in the event of contamination or physical disruption. Wisconsin has had a contingency plan since October, 1984. The contingency plan was cooperatively developed by the U.S. Army Corp. of Engineers, Wisconsin Division of Emergency Government, and the DNR. [Contact Jeff Helmuth (608-266-5234) for a copy of "Annex N - Emergency Water Supply Plan of the Wisconsin Emergency Operations Plan"].

Wisconsin's WHP program encourages communities to develop a complementary contingency plan to implement in the event that their water supply becomes contaminated. The Wisconsin Rural Water Association has developed training materials and a template for contingency plan development. We propose to support the use of these materials and to identify model contingency plans for use by communities.

### **Question 10: Should the state do more to promote contingency plans for public water systems?**

The EPA, through Region 5, will strongly encourage cooperation among states to accomplish compatible and complementary source water assessments in watersheds that include more than one state. While these efforts are voluntary on the part of the states, EPA has offered to facilitate discussions and provide regional assistance. The State has contacted neighboring states regarding interstate assessments and has found that they are cooperative in providing available information needed for assessments.



**Question 11: Should the state request that the EPA coordinate/facilitate discussions on these assessments?**

**Making the Results of the Assessments Available to the Public**

Once assessments are complete, the following information will be available:

- A map for each well or intake or group of community wells or intakes showing the source water protection area (SWPA) delineated for each well or intake and the location of existing or potential contaminant sources within each SWPA. The types of contaminant sources will be identified by a three-letter code.
- A contaminant inventory form which identifies the types of contaminant sources with each SWPA.
- A description of the methodology used to in the susceptibility analysis of each public water supply system.
- A narrative describing the susceptibility for each public water supply system well or intake.

The DNR proposes that the report for each municipal water supply system would contain a map of each well or intake and the potential contaminant sources identified within each source water area, a description of the vulnerability of the contaminants identified, a ranking for each public water supply well or intake within that system, and recommendations for actions to protect that community's water system.

The DNR doesn't anticipate getting many requests for "all the information" collected during each assessment, but should be in a position to provide all the information if requested. Anticipated improvements in data management and GIS capabilities should make the information readily accessible. If someone asks for all the information, we intend to find out their interest and tailor a report to meet their needs.

As part of reporting assessment results the state will need to prepare maps showing the delineated assessment areas and locations of contaminant sources. Maps may be created using various features available in Geographic Information Systems format such as roads, highways, railroads, airports, waterbodies and political boundaries. Alternatively, maps may be created using digital raster graphics (DRGs) as the background. A DRG is a scanned image of a USGS topographic map which we can overlay with delineations, wells and contaminant sources. Maps using DRGs would show much more detail than GIS maps including a large variety of natural and manmade features. Another option which may be available by the time we are ready to create maps is the use of digital orthophotos (DOPs). A DOP is a digital image of an aerial photo, and like DRGs may be overlaid with other data. Use of DOPs would result in more detailed and usually more up-to-date maps than the previous two options. DOPs are not currently available for the whole state but may be available statewide within a year. The State proposes to use the DOP coverage if available statewide by the time the assessments are completed. If DOPs are not available we propose to use DRGs.

The DNR proposes to print all maps so that they fit on an 8½ x 11 sheet of paper. The DNR intends to print maps of all municipal wells and significant potential sources of contamination at a scale of 1:24,000 which is the standard format for U. S. Geological Survey maps. For communities where all the wells and SPSCs don't fit on one 8½ x 11 sheet of paper at that scale, maps of each of the wells and the SPSCs will be produced at a scale of 1:24,000 plus a smaller scale map of all the wells and SPSCs for that community on an 8½ x 11 sheet of paper. Countywide maps may also be produced.

The DNR proposes to make the availability of a community's assessment known as soon as it is completed. It will accomplish this by issuing press releases and working with the local media. A copy of the assessment, including maps, will be sent to the community's water supply operator. A shorter version of the report may be put on the website. It is our long-term goal to put all assessment information on the website. Paper copies of the report will also be made available. We may also make information available by county if there is interest.

DNR staff will be available to explain the assessment process and results when needed. However, after the assessment is completed and provided to the water systems we will direct inquiries to the systems in order to give them a sense of citizen interest. This community interest will be the basis for source water protection efforts undertaken by the community or system.

**Question 12: Do you agree with the proposed strategy for making the results of the assessments available to the public?**

**State Program Implementation**

Until the SWAP plan is approved, it is uncertain exactly when the various parts of the SWAP will be implemented. However, many of the tasks below have been started and are proceeding concurrently. Assuming that the SWAP plan is approved by EPA as proposed here, the state will follow this general timeline:

1. Assemble existing information

- Vulnerability assessment SPSC inventories will be compiled by December 1998 for municipal wells, by December 1999 for OTM wells, and December 2000 for non-transient non-community wells.
- identify and compile existing databases of potential contaminant sources in DNR, other state agencies, federal agencies, local governments, and planning organizations for use in surface water system assessments by Fall, 2001.

2. Implement public participation process

- complete state-specific questions for public participation by October, 1998
- identify members of the public interested in participating in SWAP plan development by October, 1998
- obtain, compile, and address input from interested members of the public and the SDWA AHAC in an ongoing process that will be focused in the short term on coming to a consensus on the State SWAP plan by December 1998.

3. Prepare SWAP plan

- prepare a final draft of the SWAP plan for public and SDWA AHAC input by late November, 1998.
- prepare a response to public and SDWA AHAC input by late January, 1999.
- prepare a final SWAP plan and submit to EPA by February 6, 1999.

4. Groundwater system delineations, resource characterizations, and assessments

- Locate and map all public water supply wells by December, 2001
- Delineate source water protection areas by the following proposed methods:
  - municipal wells: at a minimum calculated fixed radius delineations based on 5 year time of travel and annual pumping with a minimum radius of 1200 feet delineations will be

completed during the summer of 1998. A process for completing advanced delineations for municipal systems where calculated fixed radius delineations are not appropriate will be set up by Spring, 1999 and will run continuously through the SWAP implementation.

- other than municipal community and non-transient non-community wells: 1200-foot fixed radius delineations will be completed during the summers of 1999 and 2000, respectively.
- transient non-community wells: 200-foot fixed radius delineations will be completed by Spring, 2001.
- Inventories of SPSCs for groundwater system source water protection areas will be completed by Fall, 2001.
- Resource characterizations will be completed by Spring, 2002
- Source water protection areas, SPSCs and natural resource characteristics will be mapped in a GIS for all groundwater systems by Summer, 2002.
- Susceptibility analyses will be completed by Spring, 2003

5. Surface water system delineations and assessments

- All surface water public water supply intakes have been located and mapped.
- Watershed boundaries will be delineated as source water protection areas for each surface water public water supply intake by December, 1998.
- Resource characterization will be completed by Spring 2000
- Relationships with surface water programs will be established to facilitate SWAP/watershed approach cooperation by Fall 1999.
- Source water protection areas, natural resource characteristics, and contaminant inventories will be mapped in a GIS for all surface water systems by Summer, 2002.
- Susceptibility analysis will be completed by Spring, 2003

**Question 13: Is the preceding timetable an acceptable plan for implementing the SWAP? If not what suggestions do you have?**

During implementation of the SWAP there are numerous opportunities to report to EPA regarding progress of the SWAP. We propose to report assessment results to EPA when we provide them to public water systems. Additionally we intend to provide an annual progress report to EPA Region 5 on SWAP implementation. The DNR will also meet with Region 5 semi-annually to discuss the progress of the SWAP.

**Question 14: Do you agree with this plan for reporting to the EPA regarding SWAP implementation? If not what suggestions do you have?**

State agencies will need to coordinate closely with each other, and with other stakeholders when implementing SWAPs. The state proposes that DNR staff hold meetings with representatives of other state agencies, federal agencies, and local stakeholders to ensure communication and coordination during the SWAP implementation. The DNR will promote sharing of information and resources for common goals.

**Question 15: Are there other ways that the state agencies should coordinate with each other and with other state, federal, and local stakeholders when implementing SWAPs?**

There will be a need to update assessments due to changing information that may affect delineations, resource characterizations, contaminant inventories, and/or susceptibility analyses. However, after May

6, 2003 there will no longer be federal funding available for source water assessments. The state would like to maintain the usefulness of the assessments but cannot guarantee a set schedule for updating all aspects of them. We propose to update assessments as much as possible on the vulnerability assessment schedule. Currently the state does vulnerability assessments on a 3 year schedule (i.e. municipal systems in 1998, other-than-municipal systems in 1999, and nontransient noncommunity systems in 2000, transient noncommunity systems concurrently during 1998-2000, municipals in 2001...).

**Question 16 : Should the state update the assessments as much as possible on the 3-year vulnerability assessment schedule or should a new system or timeframe be established?**

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